

# National Health Accounts in Developing Countries: Improving the Foundation

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## Executive Summary

National health accounts describe expenditure flows both public and private within the health sector. They describe the sources, uses, and channels for all funds utilized in the health sector and are a basic requirement for optimal management of the allocation and mobilization of health sector resources. The need for national health accounts has long been recognized, but in most countries their compilation and use is undeveloped.

Although national health accounts resemble national income accounts in purpose, they cannot be based on them because of conceptual and methodological problems. These stem from the fact that the United Nations' (U.N.) Standard National Accounting System (SNA) was designed for a different purpose: the analysis of economic conditions, particularly production. It is unrealistic to expect that the SNA will be modified sufficiently to permit its use for health sector analysis. Experience in developed countries indicates that national health accounts are best compiled separately from national income accounts by a specific agency linked to the ministry of health because central statistical agencies are unlikely to have the expertise needed to deal with health data.

The experience gained by the United States in compiling its national health accounts is of particular relevance to most developing countries, given the highly pluralistic nature of health care financing and provision in that country. The U.S. national health accounts are compiled from a variety of sources by the Health Care Financing Administration (HCFA). Virtually all of these data have been obtained by third parties for other purposes. Since this type of data is characterized by differing definitions and considerable gaps in coverage, HCFA expends much effort in adjusting or extrapolating from the data. The quality of the data also varies, and thus there is a continuous effort to reevaluate the reliability of different sources. The resulting final estimates are thought to be more accurate than the individual data sources from which they are derived.

The potential benefits of national health accounts for developing countries are just as great, if not greater, given the economic constraints faced by many of these countries. Nevertheless, national health accounting is less advanced in developing countries, and few have compiled any accounts. Obstacles include poorly developed conceptual frameworks and methodological tools relevant to situations in developing countries. Although a number of manuals and guides have been developed in recent years, they focus on the procedures for carrying

out one-time surveys and offer little advice on compiling accounts on a regular basis. In addition, they provide only limited guidance on how to estimate expenditures by the private sector. Methodologies for estimating these are poorly developed, and private expenditures remain the weakest area of national health accounts estimations.

A major effort should be made to improve the current situation in developing countries. Priorities include further development, on an international basis, of the basic guidelines and definitions used in national health accounts work. Work also needs to be done on developing and publicizing more cost-effective tools for estimating health expenditures, with emphasis on private expenditures. In countries where national statistical capabilities are particularly weak, long-term technical and financial assistance may also be required.

## Introduction

In the health sector, as in any other sector, the resources available to meet national goals are limited. Thus policy makers and planners in the health sector must understand the potentials as well as the limitations of resource allocation and mobilization if they are to be effective in achieving their objectives. Essential to such understanding is accurate information about the current availability and distribution of resources in the sector and their directions of flow, as well as previous and expected changes in that pattern. The aim of national estimations of health expenditures is to provide this type of information. To be complete, national health expenditure estimates must include not only public-sector spending, but also private sector contributions and activities. Therefore, estimating health expenditures involves more than reviewing data from public budgetary reporting systems because the estimates should attempt to describe the totality of expenditure flows in both the governmental and nongovernmental sectors. The end product is a form of accounts for the health sector as a whole, which can be termed national health accounts.

National health accounts are not only descriptive statements but also are documents that can be used to improve the capacity of planners to manage the health sector. They can help in formulating and monitoring new sectoral strategies and in evaluating the impact of interventions. They form the bases for examining the allocation of resources and for such techniques as cost-effectiveness analysis and priority setting. If they are sufficiently detailed, they can also describe the flow of resources between households and institutions. In this way they may be used for the purpose of social accounting, which can examine the impacts of policies from the perspective of their distributional impact on households and can connect the macro level with the micro (household) level. At an international level, national health accounts can be used to make comparisons among countries, for example, in assessing the flow of international assistance to the health sector.

In most low-income countries, estimating national health expenditures is a relatively undeveloped activity. Both historical reasons and the difficulties involved in making estimates have prevented most of these countries from setting up national health accounts, either current or retrospective. Traditionally, the only financial information that health planners were accustomed to handling were data from official government budgets. In the period immediately following World War II, most governments took the position that if they had a role in the

health sector, it was to take sole responsibility for provision of services. It was thus not necessary to account for the activities of agencies outside the public sector. Only with the realization that governments lacked sufficient resources to meet such goals has there been an interest in examining alternative sources of provision and financing. More recent thinking has stressed the need to take a wider view of the health system as including both public and private sectors. The perceived role of government intervention is changing, away from direct provision to that of creating and managing the environment in which services are provided. To do this effectively requires information on the whole health system. In addition, where there is a concern for equity issues such as incidence and distribution of benefits and costs, analysis must include data from the demand/user side. This type of information is not available from budget documents and must be obtained from other sources. This change in the demand for information is ongoing, and so experience in meeting it is limited.

The primary goal of the Data for Decision Making Project is to enhance the use of available data in decision making and thus help the process of health sector reform. National health accounts are an important basic tool for understanding the financing and organization of the health sector. This report provides a general background review that forms the basis for development and application of a more specific tool.

The first section reviews the development of national income accounts and their applicability to health sector work. Although the importance of making national health expenditure estimates is now more widely accepted, many difficulties still prevent the formulation of reliable and useful estimates. In this regard, the development of national income accounts is of great relevance, not only because it is desirable to make national health accounts compatible with national income accounts, but also because the process of creating an international system of national income accounts offers some lessons on how to achieve the same for the health sector.

The second section reviews the history of efforts to apply existing methodologies to the estimation of national health expenditures, starting with the member countries of the Organization for Economic Cooperation and Development (OECD), where experience is greatest and the process of development most advanced. This section concludes with a description of the U.S. national health accounts, which are particularly relevant to developing countries. The third section discusses the situation in developing countries and the state of currently available methodological tools.

Much work remains to be done to improve the quality and quantity of national health accounts data. This effort will be a long process involving both international donors and individual countries. The report concludes with recommendations to help focus future efforts.

## Relevance of National Income Accounting to National Health Accounts

In essence, national income accounts are very similar to national health accounts. They describe for the whole economy what national health accounts describe for the health sector. Namely, they attempt to describe the magnitudes of output, expenditure, and income in an economy and to relate them in a systematic fashion to one another. The overall purpose is to assist the making of public policy.

Of the numerous concepts and conventions established for national income accounts, many are relevant to the construction of national health accounts and have been directly adopted. These include both the principle that money payments or transfers should not be double-counted and the distinction between capital and current expenditures. It is also desirable that estimates of national health expenditures be compatible with national income and product accounts because these are the basis for general macroeconomic analysis. Resources utilized in the health sector are unavailable to other sectors of the economy. Since a major purpose of national health accounts is to quantify health expenditures in relation to total resources, the two sets of accounts must be compatible.

The many similarities between national income and health accounts have led to numerous recommendations over the decades that national health expenditure estimates should be carried out as an extension of the normal national income accounts effort and/or by the same organizations or individuals (Abel-Smith, 1963, 1967; Foulon, 1982; Cumper, 1986). This is a matter of some importance because it involves a major choice about how national health accounting should proceed. There have also been suggestions that national income accounts alone should be sufficient for estimating national health expenditures, and that the extra effort required to make separate estimates is unnecessary (Deering, 1981). It is useful, therefore, to review the development of national income accounting before turning to the issue of national health accounts.

### Development of National Income and Product Accounts

Work on national income accounting began as early as the 17th century, but substantial development only occurred in the 20th century. As Stone (1977)

observed, economic thought in 18th-century Europe was more invested in the formulation of theoretical systems of economic connections inferred from a few primary assumptions than in observation of the realities of economic life. Analysis of the broader issues of economic and social policy was based more on precept than on statistics. Although there was a significant improvement in the availability of economic and social statistics during the 19th century, especially in Great Britain, no one attempted to synthesize these in a unified manner.

It was not until the 1930s that economists realized that income and production estimates could be combined and related within an accounting framework. The economic difficulties of the 1920s and the subsequent depression demonstrated the importance of basing macroeconomic policy on detailed assessments of the real economy. This concept resulted in a new emphasis on the factual study of economic conditions. Several writers, such as Keynes, stressed the connections between macroeconomic variables and the need for a framework within which these variables could be related and which could be filled in with numerical estimates. In response to these suggestions, several countries, including the United States, Great Britain, The Netherlands, and Palestine, produced the first national income and product accounts.

In retrospect, the process of development of national income and product accounts can be seen to have passed through four recognizable stages, summarized in table 1. A similar four-stage process can be identified with respect to the development of national health accounts. While stage 2 in the development of national income accounts corresponds to the 1920s and 1930s, stage 2 for national health accounting corresponds to the 1970s and 1980s. These ideas will be further discussed in the section on health expenditure estimates in developing countries.

**Table 1**

**Stages in the Development of National Accounts: Common Historical Features**

<i>Stage 1</i>	<i>Stage 2</i>	<i>Stage 3</i>	<i>Stage 4</i>
Policy based on theory driven from assumptions	Economic crisis engenders perception of need for empirically-based policy-relevant analysis	Systematized data collection begun	Cross-national harmonization of accounting frameworks
Little demand for national accounts data	New approaches to policy making developed, requiring real data on real quantities and relations	National accounting frameworks developed	Policy making significantly influenced by analysis of international differences

Once several national accounting frameworks had been established, the process of development entered the fourth stage after 1944. Various attempts were made to standardize and arrange the various systems of national income accounts according to common formats. The Organization for European Economic Cooperation published a standard system of national accounts in 1950 and 1952; the United Nations followed in 1953 with its Standard National Accounting System (SNA). The differences between the two were relatively minor. The SNA formed the basis for much work done in the 1950s that spread the application of national accounting to developing countries. It was later revised (U.N. Statistical Office, 1968) and is the standard now used in most countries. However, while there is now an internationally accepted system of national accounts, it has not yet been fully assimilated by many developing countries. Problems also remain in adapting methodologies created in developed countries to the circumstances of the poorer developing countries (Chander, 1990). Nevertheless, a set of national income and product accounts does exist for most countries, even though the reliability of the numbers varies considerably. The existence of these estimates permits valid comparisons between countries for a number of features in their economies. Without these developments, much of the current work in comparative economic analysis would not be possible.

## National Health Expenditure Estimates in the OECD

Development of national health accounts has followed that of national income accounts, and in many ways the two share common pathways of development. The process began in the advanced developed countries and is only now gathering pace in the developing world. In both settings it has evolved through the stages described for national income accounts.

For much of the post-World War II period, expenditures on health in OECD countries rapidly expanded, without much analysis being done as to the underlying causes or as to the real extent of spending. Relatively few reliable cross-national data were available, and the understanding of what determined differences in health expenditures across time and countries was limited, if not erroneous. It was only with the recessionary impact of the spiraling cost of oil in the early 1970s that serious concern for the underlying trends in expenditures emerged (OECD, 1977). This concern fostered a greater demand for more accurate and meaningful estimates of expenditures at a national level. This development was coupled with a new interest in many European countries in trying to understand the economics and dynamics of the health sector. In the early 1970s considerable efforts commenced in most countries to collect systematic data and to define the conceptual frameworks and definitions underpinning much of the work.

Only after most countries had established their own sets of national health accounts did the process enter the fourth stage. The 1980s saw efforts within the European Community and the OECD to harmonize concepts, definitions, and approaches on the basis of a common accounting system (OECD, 1985). The European efforts are often very closely aligned with official developments in the OECD as a whole, since the latter Paris-based organization is staffed by many European officials. However, this process of standardization is likely to last some years, and no common solution is expected until late in the 1990s. Considerable difficulties exist even in European countries in making national health accounts compatible because of the very major differences in the structure of national health systems.

## Using National Income Accounts To Estimate National Health Expenditures

Three of the key objectives in estimating national health expenditures (or national health accounts) are:

- To quantify the resources expended, according to their sources and uses;
- To understand the role of health expenditures in a broader macroeconomic context;
- To allow comparisons across countries, with a view to understanding and explaining differences.

The ultimate aim of all these objectives is to inform the making of policy. Knowledge of the uses of funds is important when considering the allocation of scarce resources across competing objectives. This need for information applies not only within the health sector, but also across sectors, since resources utilized by the health sector are not available for other forms of consumption or investment. Knowing the flow of funds their sources and channels is also important in understanding whether and how changes in resource allocation and mobilization can be effected. Making cross-national comparisons provides a benchmark for judging the levels and structure of spending in a particular country.

Therefore, it has seemed to make sense to regard the construction of national health accounts as being a natural extension of compilation of national income accounts. This viewpoint has usually led to attempts or proposals to base the collection of national health expenditure estimates on the existing SNA framework and database. From a theoretical perspective, this approach is attractive since national income accounts are supposed to quantify all items of consumption, including health-related ones. The only apparent problem that has to be overcome is modification of the data so that the quantities of interest can be derived. Some of the categories important for health sector analysis are not identical to those used in the SNA, and so inclusion and omission of certain subcategories may be necessary. Clearly, if these adjustments can be made, they would represent an easier and, more importantly, a cheaper method than making estimates independently (Deering, 1981).

Unfortunately, a number of conceptual and methodological problems have prevented implementation of this process, even in OECD countries. Although these problems would apply also to developing countries, they are reviewed here in the discussion of national health expenditure estimates in OECD countries because these countries do not suffer from many of the data-quality and operational difficulties found in developing countries. (The construction of subsidiary ac-

counting systems may also be ill-advised when it is still unclear that the SNA method has been successfully incorporated into the statistical system of every developing country.) These issues have also been considered and discussed more in the OECD, and so reference to the debate there is of value. For more detailed discussions of these topics, see Foulon (1982) and Pétre (1983).

Major conceptual reasons make the unmodified SNA less useful for health sector work and estimation of national health expenditures. The conceptual bases for the SNA are also significant in that they have shaped many of the classifications and methodological approaches that have been developed for compiling national income accounts. These classifications and methodological approaches may also be inappropriate for health sector work.

The conceptual problem stems from the fact that the purpose of the SNA (and of other systems for national income accounts) was and remains different from that of national health accounts work. This distinction leads to two major sorts of difficulties:

- The economic categories used in the SNA may not be appropriate for health sector analysis. A basic principle of the SNA is that similar activities should be grouped together in the same economic category. The usual categorization consists of the following: government services, productive enterprises, households, capital accumulation, etc. Implicit in this approach is the idea that all economic transactions can be represented as transfers between one or more of these fundamental categories. On the other hand, national health accounts work is concerned not with the economic nature of the activity but with its purpose, namely the promotion of health. Health care consists of a number of components that fall into all of the above categories.
- The SNA was primarily developed to aid analysis of production conditions. Therefore, the classifications inherent in the system and the methodologies that have arisen are not always suitable for analyzing a service-oriented activity such as health care.

Examples of these difficulties are discussed below.

### Conceptual and Classificational Difficulties

The problem of defining what constitutes health services or the health sector is always difficult and controversial. The conceptual difficulty lies in the fact that many human activities can be regarded as contributing in some way to the improvement of health, e.g., primary schooling, refuse collection, clean water supplies, etc. At some point arbitrary choices must be made in distinguishing health services from other services. While there is no definitive solution, working definitions can always be posited.

Unfortunately, the conceptual bases and the associated classifications found in national income accounts are generally not helpful in reconciling expenditures with whatever definition is being used. The accounts were originally designed for the analysis of economic growth and thus focus on production activities and the quantities of goods rather than on services. Since health activities are generally services, national income accounts do not provide adequate means to deal with them.

For example, the SNA classifies government consumption on the basis of institutional nomenclatures. All expenditures in a department are classified under the function of that department. Thus medical services for the military are included in national defense, while school medical services are included in education. Similarly, employer-provided, work-based occupational health services are defined as intermediate consumption and thus do not appear in the final consumption figures. Classification problems also exist in the realm of private consumption. For example, the difference between premiums paid to health insurance funds and their payments out for actual health services, i.e., their net administrative costs and profits, are classified under financial services.

Services are not disaggregated to the same extent as goods. While this does not in itself prevent estimation of the overall aggregates, it does prevent the production of the more detailed figures that are of direct concern to health sector planners. For example, services provided by doctors, nurses, and other health personnel are not broken down any further; such classification is the case with individual components of expenditure on food, e.g., sugar (Foulon, 1982). Hospital services are not disaggregated into inpatient and outpatient treatment; however, this disaggregation is necessary for any detailed sectoral analysis.

Another problem of disaggregation relates to the categorical distinctions used. Since the definitions used in the SNA were meant primarily for the analysis of production conditions, they are not always satisfactory for dealing with health expenditures (Foulon, 1982). For example, one of the improvements made to the original SNA was to distinguish between market and nonmarket output. Services are considered market if the income from their sale covers half or more of their production costs. Final consumption of such market goods and services is allocated to households, while final consumption of nonmarket goods and services can only be allocated to government and private nonprofit institutions. Where the public administration substantially controls and finances a national system of health services and places certain restrictions on the consumer's choice, the SNA concludes that the government service is the purchaser of these services. Therefore, these are classified as nonmarket output. If the individual is free to choose between services, even if these are regulated by the state, then the household is regarded as the consumer of the service. Unfortunately, even in countries with predominantly publicly-produced health services, consumers will still have a choice, albeit a small one, between a nonmarket

public sector and a market private sector. Therefore, logically, consumers (i.e., households) can consume the public nonmarket services. But these cannot be allocated under the SNA to households.

Other distinctions, such as those between public and private financing or between individual and collective consumption, are not built into the SNA. These distinctions would describe how the flows of funds are channeled and are of importance in describing health expenditures. If the SNA framework is to be used for detailed analysis, a number of additional definitions and distinctions would have to be included (Foulon, 1982).

### Methodological Difficulties

National income accounting consists not only of an accounting framework, such as the SNA, but also of the statistical methods used to compile the actual figures. The methods normally used in constructing national income accounts are not appropriate and are not sufficiently rigorous or specific enough to be useful for health accounts work. Originally, they were designed for goods, which are tangible in nature and are themselves usually produced from other material inputs by some easily recognizable process. Since the production of goods can be physically measured, it is relatively easy to impute value to it. For example, the value of a rice crop can easily be imputed from estimates of the total physical output and data on market prices. Services are by nature intangible and are often produced in exchanges between individuals. A set of methods that are adequate for measuring physical output in an economy may not be so useful for measuring levels of services. A haircut produces no physical output that can be measured and so is much harder to value.

For example, household sample surveys are central to measuring household expenditures and utilization of health services. These surveys are also an essential feature of primary data collection for national income accounts. But household expenditure surveys, which are adequate for the purpose of measuring overall financial flows for the latter purpose, are usually unsatisfactory for detailed analysis of the much smaller components of health expenditure. The problems relate not only to insufficient sample size and lack of sensitivity in the data, but also to such factors as unsuitable design of survey instruments and inappropriate recall periods.

### Operational Difficulties

Compilation of national income and product accounts for a country requires considerable personnel and resources. These are usually located in a national statistical office. It can be argued that to avoid duplication of effort these resources should also be used to compile national health expenditure estimates. Although some additional costs would be involved, they would seem to be

marginal. In practice, however, this is not the case; neither the data nor the personnel available in a national statistical office are adequate for the task.

While some necessary data, e.g., government health expenditures (from official budget documents and accounts) are easily accessed, a significant proportion of health expenditures needs to be separately estimated. These include out-of-pocket expenses, insurance funding, expenditures by private institutions, etc. While means exist to measure these, considerable additional data collection efforts are necessary to obtain accurate, valid, and reliable estimates.

There are also likely to be a number of disparate sources of information on the health sector that will need to be consulted and sifted through. This work requires considerable personnel with expertise not likely to be found in most central statistical agencies. This specialized expertise is also critical for the purpose of analysis and for modification of the data to meet the demands of users in the health sector. These complications are in addition to the problems that arise from the different definitions involved in health sector work.

In summary, considerable conceptual, methodological, and operational difficulties impede adaptation of a national income accounts framework for national health accounts work. They stem from the fact that the purpose of the former was never to aid analysis of services, and of the health sector in particular. While modifications can be made, they are greater in scope and would require considerably more resources for implementation than is often realized. Despite the large (6-14% of gross national product) and growing expenditures on health in higher-income countries, substantial and sufficient modifications of the SNA to this end have not been made. This is not surprising, since there is considerable inertia in such a complex international system of statistical analysis, whose primary objectives lie elsewhere, and it is also hard to justify in practice that the special needs of the health sector are greater than those of others. Since health planners have needed estimates regardless, most OECD countries have developed alternative and independent mechanisms for estimating health expenditures. Because of the need for timely and policy-relevant data as well as understanding of often highly complex health systems, in most cases the task of making estimates is entrusted to agencies other than the central statistical agencies. These are usually within the relevant health ministry or have close institutional links with it.

## U.S. National Health Accounts

One of the oldest series of data on national health expenditures available is the national health accounts of the United States (USNHA). Since 1964 the U.S. Department of Health and Human Services has published an annual series of statistics describing total national health expenditures for each year. What

makes these accounts a particularly relevant example for many developing countries is the considerable experience gained over three decades in making estimates in the context of the highly pluralistic nature of health care financing and provision in the US system. (For a more detailed description of the USNHA, see Lazenby et al. [1992] from which this discussion has drawn heavily.) The structure of health systems in other developed countries differs greatly from those found in most developing countries, in that they are dominated by either direct public provision of health care or by social insurance provision. Financial data on these forms of provision are relatively easy to obtain, and thus experience in dealing with nongovernmental or lightly regulated forms of provision is limited.

### Framework and Design

The USNHA are presented in the form of a two-dimensional matrix that disaggregates total health expenditures according to their sources and services purchased by them. An example of this matrix is given in Table 2. There are several features of importance in the USNHA matrices:

- They aim to be comprehensive, presenting the totality of interconnected flows in the whole health care system, including public and private components.
- They are multidimensional and can be expanded to incorporate other dimensions of analysis including time, geography and age.
- They are consistent in that they apply a common set of definitions, which allow comparisons to be made over time.
- The use of an accounting matrix requires that numbers be internally consistent in that they fit into two separate dimensions of the matrix; this process controls both sampling and nonsampling errors.<sup>1</sup>

### Process of Compilation

While the USNHA remain compatible with the national income and product accounts, they bring together in one place estimates of total health expenditures. The USNHA estimations are made separately by the Office of National Health Statistics of the Health Care Financing Administration (HCFA). In making the annual estimates, HCFA relies largely on secondary data sources compiled by other organizations for their own purposes. The U.S. health care system is highly diverse and characterized by an unusually high proportion of private expenditures. (The proportion that is private is unusually high for a developed country but is, in fact, comparable with the proportions found in low-income developing countries [World Bank, 1993].)

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1/ Many of the initial estimates are subject to considerable sampling and nonsampling errors. The requirement that each estimate fit into two dimensions, provides some independent check on each number's reliability. Adjustments can be made to each of the initial estimates based on what is known about their reliability. Not only will the final estimates be internally consistent, but their variances will be no greater, and usually far less, than the initial estimates.

Table 2

## National Health Expenditures, by Source of Funds and Type of Expenditure: Calendar Year 1990

Type of Expenditure	Total	Private					Government		
		All Private Funds	Consumer				Total	Federal /1	State and Local/2
			Total	Out of Pocket	Private Insurance	Other			
National Health Expenditures	\$666.2	\$383.6	352.9	\$136.1	\$216.8	\$30.6	\$282.6	\$195.4	\$87.3
Health Services and Supplies	643.4	374.8	352.9	136.1	216.8	21.8	268.6	184.3	84.3
Personal Health Care	585.3	343.5	322.2	136.1	186.1	21.3	241.8	177.2	64.6
Hospital Care	256.0	116.0	102.2	12.8	89.4	13.8	140.0	104.6	35.3
Physician Services	125.7	81.7	81.7	23.5	58.2	0.0	43.9	35.1	8.8
Dental Services	34.0	33.1	33.1	18.0	15.1	-	0.9	0.5	0.4
Other Professional Services	31.6	25.2	21.5	8.8	12.8	3.6	6.4	4.9	1.6
Home Health Care	6.9	1.8	1.3	0.8	0.5	0.5	5.1	4.1	1.0
Drugs and Other Medical Nondurables	54.6	48.5	48.5	40.2	8.3	-	6.1	3.0	3.1
Vision Products and Other Medical Durables	12.1	9.4	9.4	8.2	1.3	-	2.7	2.4	0.3
Nursing Home Care	53.1	25.5	24.4	23.9	0.6	1.0	27.7	17.2	10.5
Other Personal Health Care	11.3	2.2	-	-	-	2.2	9.1	5.5	3.5
Program Administration and Net Cost of Private Health Insurance	38.7	31.2	30.7	-	30.7	0.6	7.5	4.8	2.7
Government Public Health Activities	19.3	-	-	-	-	-	19.3	2.3	17.0
Research and Construction	22.8	8.8	-	-	-	8.8	14.0	11.0	3.0
Research	12.4	0.8	-	-	-	0.8	11.5	10.0	1.5
Construction	10.4	8.0	-	-	-	8.0	2.5	1.0	1.5

1/ Detailed Federal Government financing program estimates are made for Medicare, Workers' Compensation, Medicaid, Department of Defense, Maternal and Child Health, Vocational Rehabilitation, Alcohol, Drug Abuse, and Mental Administration, Indian Health Service, and miscellaneous general hospital and medical programs.

2/ Detailed State and local financing program estimates are made for Temporary Disability Program, Workers' Compensation, Medicaid, General Assistance, Maternal and Child Health, Vocational Rehabilitation, hospital subsidies, and school health.

Notes: 0.0 denotes less than \$50 million. Research and development expenditures of drug companies and other manufacturers and providers of medical equipment and supplies are excluded from research expenditures, but are included in the expenditure class in which the product falls. Numbers may not add to totals because of rounding.

Source: Adapted from Lasenby et al. (1992). Data are from the Health Care Financing Administration, Office of the Actuary; Data from the Office of National Health Statistics.

In addition to a multiplicity of private financing and provider types, the United States has a number of different public programs that both finance and provide

**Table 3**  
**Some Sources of Information on Financing and Provision of Health Care in the United States**

<i>Care/Product Provided</i>	<i>Primary Data Sources</i>	<i>Modification and Estimation</i>
Hospital Care	AHA annual voluntary survey of hospital expenses  Federal agency data from federal hospitals	Data for nonrespondents (~10%) imputed by analysts  Cross-sectional AHA data converted into longitudinal files by individual hospital  Data sets edited to ensure consistent reporting across time  Revenues estimated from expenses using standard known revenue-expenses ratios  Review conversion: accounting year into calendar year  Final adjustments and editing done
Drugs and Other Nondurable Products	Shipments and sales as reported to the PMA  Annual survey of operations of drug wholesalers and retailers by industry association	PMA data adjusted for nonrespondents  Inventory ratios derived from industry surveys of various components of the pharmaceutical distribution network  Margins of drug sales estimated from surveys of the different components of the pharmaceutical distribution network  Total expenditures estimated using data
<b>Financing Sources</b>		
Out-of-Pocket Expenditures	Annual (CE) of the noninstitutional population conducted by the US Bureau of Labor  Periodic national surveys of nursing homes  Home health care surveys by the VNA  AHA, AMA and ADA surveys of revenues received by provider members  US Bureau of the Census's SAS of businesses	CE estimates reduced by amounts received as insurance reimbursement by individuals  Expenses of institutionalized population estimated from nursing home surveys  Home health care expenses derived from VNA surveys  AHA, AMA, and ADA data on provider revenues paid for out-of-pocket and collected  SAS data from outpatient clinics used to make estimates of sources of funding  All sources compared with one another/combined to obtain total out-of-pocket expenditures, disaggregated by category
Non-Federal-Government Hospital Subsidies	AHA annual surveys	Tax subsidies estimated from information on revenues sources available from AHA surveys

Abbreviations: AHA = American Hospital Association; PMA = Pharmaceutical Manufacturers Association; CE = Consumer Expenditure Survey; VNA = Visiting Nurse Association; AMA = American Medical Association; ADA = American Dental Association; SAS = Services Annual Survey

health care. To make overall estimates, data on each of these different sources and uses must be gathered, and then brought together during the process of analysis. Table 3 lists a few examples of these data sources and the methods used to modify them.

As can be seen, a variety of data sources are used in making each estimate. This is not an indulgence on the part of HCFA, given the wealth of statistical data that is potentially available. Instead it reflects the diversity of the health system and the need to make accurate estimates not only overall, but also at the disaggregated level. Virtually all data utilized are obtained by third parties for other purposes. Therefore, the data are rarely in a form suitable for final use or complete in coverage. Incomplete coverage is dealt with by supplementing with other data sources that relate to any gaps or by extrapolating from known data with use of reasonable assumptions gathered, where possible, from sample surveys.

None of the procedures followed in making a particular estimate are fixed. They are frequently changed, if better data sources become available, if the quality or comparability of data sources deteriorates or changes, or if evidence reveals that current procedures are unsatisfactory. There is a continuous effort on the part of HCFA, and also of others, to reevaluate both existing data sources for reliability and breadth of coverage and the estimation procedures in terms of results and costs. Supplementary data are constantly collected to verify the reliability of currently used sources.

### Case Study: Estimation of Expenditures for Physician Services

The points outlined above are well illustrated in the case of the expenditure estimates for physician, dental, and other professional services (Lazenby et al., 1992). These are essentially all private providers. They are disaggregated into various categories by use of the Standard Industrial Classification (SIC), a standardized taxonomy of services in the economy used by government agencies for statistical purposes. The SIC is itself periodically revised, and when significant changes occur, HCFA modifies its own procedures and databases to incorporate them. Physician services are defined as consisting of several of these SIC groups (SIC 801, 803, and part of 8071). Dental and other services are similarly defined. In the USNHA, a further qualification is made to the definition of professional services: where patient services are provided through an organized form of care, in which individual professionals are paid indirectly in the form of wages or other forms of institutionalized compensation, these services are reported under the expenditures for that organization. Thus the services of hospital interns and resident physicians are classified under expenditures for hospital services, and those of army physicians are classified with other health services.

Until the late 1970s, expenditures were estimated from federal tax returns. These data are available in the form of SIC categories. Adjustments have to be made to the original data to prevent double-counting of physician-billed independent laboratory services that were already counted under the category of laboratory services. The Internal Revenue Service (IRS) publishes data based on an analysis of a sample of returns in its Statistics of Income (SOI). Unfortunately, budget cuts forced the IRS to reduce the size of its sample, and this resulted in erratic estimates of year-to-year growth. Therefore, the IRS data were replaced by data from the sample survey of U.S. Bureau of the Census' Services Annual Survey (SAS), which provides estimates of year-to-year changes in business receipts. This information is then combined with the more detailed data available from the five-yearly Census of Service Industries, which surveys all service establishments. The data from this survey provide benchmarks for the SAS, which allow estimates to be made by interpolation for intervening years. Since the various censuses have used different versions of the SIC, adjustments must also be made to allow data series to be constructed with use of the different definitions, so as to allow valid comparisons to be made over time.

The above procedure is used to make the final estimates of expenditures on physicians. These are then verified by use of various independent data sources, from which alternative estimates can be made. These sources currently include data on employment and earnings in nongovernment establishments, estimates of price inflation derived from the Consumer Price Index, and indirect measures such as numbers of hospital admissions, inpatient stays, etc.

## Evaluation of USNHA

Continual changes in the underlying data sources require continual reevaluation of their use and consideration of new ones. In addition, the unceasing evolution of the U.S. health system leads to continuous changes in its structure. This pattern of frequent change has two consequences:

- Structural changes eventually require construction of new categories and definitions and thus collection of new sets of data.
- The concerns of policy makers change often, and they require new types of information.

Evaluation of both performance and objectives is built into the USNHA process. HCFA makes continuous efforts to review the quality of the underlying data sources and the reliability of different estimates. Often several estimates, using different sources of primary data, are prepared for a particular category of interest and then the estimates are compared with one another before the most reliable is taken. When there are changes in certain years among particular data sources or in the classifications used to compile data, HCFA will prepare and

make available two sets of final estimates, one based on the new source or classification and another on the historical one. Often estimates for previous years will be revised to make them compatible with the newer ones, or cross-walks will be provided to allow users to switch between different series of estimates.

In addition to these routine efforts, HCFA organizes regular conferences and representative technical panels to review the process. (See Lindsey and Newhouse [1986], Health Care Financing Administration [1990], and Haber and Newhouse [1991].) At these meetings major users of USNHA data meet statistical experts and representatives of HCFA. Current difficulties and inadequacies are discussed and suggestions are made as to future directions. If users believe new categories of data should be collected, their proposals can be discussed and some consensus reached before major changes are made. This process helps ensure that the USNHA remain relevant to their ultimate users, and that the concepts, methods, and procedures are kept up to date.

## National Health Expenditure Estimates in Developing Countries

National health accounting in developing countries is still at a relatively early stage. In terms of the four-stage process described in Table 1, it had only reached the end of stage 2 by the start of the 1990s. Until the late 1970s and early 1980s, systematic analysis of health care financing was minimal. It would be fair to say that much of international health policy thinking was concerned with the process and outcomes of health systems, and very little with resource mobilization. In retrospect, it was the economic crisis in many developing countries in the 1980s that led to renewed thinking about the problems of resource constraints at both a national and an international level.<sup>2</sup> This change led eventually to the perception that basic health financing data needed to be collected both to support policy proposals and to help in their implementation.

### Early Work

The first systematic study of health expenditures in developing countries dates from the initial studies by Abel-Smith on behalf of the World Health Organization (WHO) (Abel-Smith, 1963, 1967). These studies were questionnaire-based surveys of health expenditures in both developed and developing countries. The 1963 survey included two developing countries: Chile and Sri Lanka, while the 1967 survey included 21 developing countries. Abel-Smith's landmark surveys were the first attempt to apply a standard set of concepts and definitions to the analysis of health expenditures in many different countries. These surveys also used a standard approach and methodology for analysis and handling of the data. However, since neither of the studies involved active collection of primary data, they did not address the problems of collecting data in the field.

Although in both studies the author pointed to the need to carry out national health expenditure surveys on a regular basis for planning purposes, there was little progress in the ensuing decade. A number of similar studies were conducted in the 1970s, but these were generally reviews of existing data and dealt mostly with developed countries (Simanis, 1973; IEDES, 1976; Abel-Smith and Maynard, 1978; Maxwell, 1981).

In 1976 the WHO, in collaboration with the Sandoz Institute for Health and Socioeconomic Studies in Geneva, started a small program to develop methodol-

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2/ Stage 2 in this process can be identified with the 1980s, when most Latin American and African governments faced severe economic difficulties and fiscal constraints. In some of the faster-growing parts of East and Southeast Asia, there was also an increased interest in the issues of health financing, but this was often because of the need to manage the impact of rapid economic growth on the growth of demand for health care and the size of the private sector.

ogies for conducting surveys of health expenditures in developing countries. This step marked an important turning point. As a consequence of this program, a number of short but systematic surveys were done in several countries. The most important was one done in nine weeks in Botswana (Kam et al., 1977). Another aspect of the WHO-Sandoz program was investigation of the feasibility of short-term use of foreign experts to conduct surveys. Successful surveys were done in this manner in two francophone African countries, Senegal and Rwanda.

The success of the Botswana study resulted in a detailed manual on the collection of health expenditure data. It was written by the planning officer in the Botswana Ministry of Health, who had carried out the initial survey (Kam, 1978). It was based on the Botswana experience and on the previous work by Abel-Smith (1963, 1967) and was intended to be relevant to other countries. The manual covered most of the topics and issues involved in producing estimates of a country's health expenditures, including procedural and logistical aspects. However, it tended to be lacking in practical details, particularly in relation to the estimation of private expenditures, where it is generally simplistic and overly optimistic in its methods. This shortcoming seems to have been a reflection of the ease with which the original survey was carried out in Botswana, a country with a population of less than one million, only eleven private-practice physicians, and an administration remarkable for its competence and effectiveness.

Around the same time a shorter and less detailed manual had been independently produced as a result of work sponsored by the U.S. Agency for International Development (USAID) and the Pan American Health Organization (PAHO) in Latin America (Zschock et al., 1977). This work, too, owed much to a basic methodology originally developed for one country, Bolivia. At the same time several other unconnected studies had dealt with health expenditures in developing countries. These investigations included the studies in South Korea (Park, 1977), sponsored by USAID, and Bangladesh (Cumper et al., 1978), sponsored by WHO.

In 1977, WHO brought together a Study Group on Financing Health Services to examine the techniques for obtaining and analyzing health financing data and for identifying major categories of expenditures. The Study Group reviewed previous studies and included many of the individuals who had been involved in them. Its report (WHO, 1978) represented a consensus on what the problems were and what needed to be done. It concluded not only that health expenditure studies were useful, but also that it was possible to collect information of sufficient reliability and at a modest cost. Its major recommendations were:

- Countries should undertake periodic surveys of financing and resource allocation in the health sector as part of their normal planning process.
- Academic institutions should collaborate on research into different health

financing methods, and on preparation of manuals and guidelines for under taking surveys.

- WHO and other international organizations should disseminate information about the various issues and cooperate with other institutions on developing low-cost techniques for data collection and analysis.

The 1978 WHO report was also significant in that it provided a common background and framework for subsequent work.

During the late 1970s and early 1980s, WHO held a number of international and interregional meetings and workshops to spread awareness and discussion of the report's findings and agenda. After these meetings WHO developed its own manual, substantially based on the previous manual produced by Kam (1978) in Botswana. This WHO manual was widely used in draft form for some years, before it was published (Mach and Abel-Smith, 1983). This work remains the best manual that is currently available for guiding the conduct of a health expenditure survey in a developing country.

A number of other manuals were developed during this time by other authors (Rice, 1980; Robertson et al., 1979; Griffiths and Mills, 1982). Of these manuals the most widely circulated was *Money for Health*, prepared by Griffiths and Mills. It was largely based on the original manual by Kam (1978), but it incorporated a number of training modules designed for the purpose of teaching. These modules were developed and tested by Griffiths and Mills in conjunction with a two-week training course, which was held in Botswana in 1980 and supported by the WHO, the Sandoz Institute, and the American Public Health Association (APHA). The course was attended by personnel from several southern African countries. Unfortunately, copies of the Griffiths and Mills manual are now difficult to obtain. (The Sandoz Institute no longer exists; but when it did it was funded by the pharmaceutical company, Sandoz Pharma Ltd., Basel. However, a recent extensive search by the company of the external literature and of its own central archives failed to locate a copy of the manual [Bolliger, 1993]).

## Developments in the 1980s

Despite the considerable activity generated in the early part of the 1980s and the various manuals produced then, there has been little progress since that time in carrying out actual national health expenditure surveys or in improving existing methodologies and approaches.

As part of the background work done for the World Bank's World Development Report 1993 (Govindaraj and Murray, 1993), the authors conducted an extensive review of available reports, both published and unpublished, on national health expenditures worldwide. What this work revealed was not only a con-

tinuing and dramatic paucity of data on national health expenditures but also the poor or questionable quality of the few data that did exist for developing countries. This finding confirmed what had been shown by some earlier regional studies of national health expenditures in Asia (Griffin, 1992), Africa (Vogel, 1989), and Latin America (McGreevey, 1992). Two particular problems became apparent:

- The lack of a uniform system of classification and definitions in country-specific studies;
- The paucity of accurate data on nongovernmental health expenditures.

Most of the available data on national health expenditures in developing countries are not in the form of official national health accounts. For many countries the data exist in unpublished, "gray" material. Typically, these are internal reports belonging to international donors, chiefly the World Bank and USAID. Although some of these documents are eventually published, there is often a time lag of up to several years between the preparation of draft reports for internal consumption and their eventual emergence into the public domain. Furthermore, they are often prepared in relatively short periods of time and with limited logistical resources by visiting donor staff or itinerant consultants. To a considerable extent, these donor reports also differ little from analyses done by local ministries or agencies in that they fail to take a comprehensive view of the health sector. They are usually written in connection with specific donor projects, which rarely concern themselves with overall health strategy. (Even reviews of the health sectors of major countries carried out by the World Bank occasionally fail to estimate or refer to the level of activity and expenditures within the private sector.) By their very nature documents prepared by or for donor agencies have limited circulation and are not subject to peer review or external evaluation. This situation curtails public discussion of the findings and thus reduces any opportunities for quality improvement by incorporating suggestions from persons who might have more specific and relevant local knowledge.<sup>3</sup>

Most of the recommendations made time and time again, during the 1960s and 1970s, in reports by official organizations and others, remain valid today. There has been a conspicuous failure to follow through on most of these, despite increasing attention by donors and national governments to the problems of healthcare financing. Little work has been done to improve (either by evaluating existing methods or developing newer, more cost-effective ones) the methodological tools available by the early 1980s. Moreover, most of the manuals were, in fact, based on very similar material and thus often contributed little that was new.

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3/ This disparity between the quantity of data available to staff in donor agencies and to local domestic counterparts may have two effects: First, the impact of donor-compiled estimates on local statistical capabilities may be limited. Second, the relative wealth of data available within the international donor community may be masking the true extent of the problem from those who are potentially in the best position to help.

# National Health Accounts: Current Tools and Capabilities

## Status of Existing Manuals

Various manuals and guidelines purport to assist in the making of national health expenditure surveys in developing countries. Unfortunately, it is not possible to obtain many of them any longer, and some were never officially published. Of the few that are available, not all attempt to be practical guides. The work by Cumper (1986) is interesting and useful, but it provides essentially a overview of some of the conceptual problems and would need to be supplemented by another manual.

Probably the two most widely circulated guides to conducting national health expenditure surveys in developing countries are those published by WHO (Mach and Abel-Smith, 1983) and the Sandoz Institute (Griffiths and Mills, 1982). As previously noted, these are both based on work done earlier by Abel-Smith (1963, 1967) and by Kam (1978). The texts share much in common in their general approach. Therefore they tend to have many of the same deficiencies as well as the same strengths. The discussion that follows covers some of these but is not meant to be an exhaustive review of all areas.

Each of the manuals mentions the problem of defining what constitutes expenditures on health. Such a definition is needed when dealing with health-related activities, e.g., housing, nutrition, or sanitation. Griffiths and Mills (1982) suggested that the criteria should be decided by each country, although they hoped that commonly acceptable criteria would emerge. Mach and Abel-Smith (1983) made a more explicit proposal: to include "all expenditures which have a clear health purpose" and which are "primarily to meet basic needs." Such an explicit statement is important in that it stresses the need to review expenditures outside a health ministry. These are fairly broad criteria. The examples cited by Mach and Abel-Smith (1983) included expenditures on food subsidies designed to meet basic needs as well as on provision of basic housing for low-income communities. The border between what are considered primarily health expenditures and what are primarily expenditures for other purposes is generally too elusive. The difficulty arises from the fact that the stated primary purpose of an expenditure is subject to interpretation, and interpretations can vary widely

within a country and among countries. Thus it is difficult to make sense of international comparisons.

Although a more rigid definition may be one solution to the problem of differing interpretations, it may not be practicable. Policy makers in different countries have different data requirements and perspectives and thus may prefer to work with different criteria. A better solution may be to have a more conservative definition of core health activities, while also defining an additional category of other health-related activities. Countries would then be encouraged to collect data on both categories. They and other users would then have the choice of combining them if they so wish.

Both texts (Griffiths and Mills, 1982; Mach and Abel-Smith, 1983) were intended to be suitable for use in a wide variety of developing countries and circumstances. (Note that because of their roots in work done in southern Africa, both studies reflect some geographical bias in the relevance of their contents; this is most marked in the manual by Griffiths and Mills [1982].) Although this attempt at inclusiveness is commendable, it does mean that procedural details and advice are often sacrificed in the interests of generality. There is a wide variation in the nature of health systems and policy concerns across income levels and across regions. If any guide is to be of practical use, the particular problems of different areas must be addressed. Despite their shortcomings, both manuals propose relatively detailed classifications for the disaggregation of data. Table 4 gives an excerpt of one of the tables contained in the manual by Griffiths and Mills (1982). It is clear that, in practice, this level of detail will be hard to achieve in developing countries, many of which have great difficulty in estimating even total health expenditures without a large element of error.

In both manuals the methodological tools that can be useful in generating the required numbers are covered comprehensively, but briefly. The broadest outline is usually given, with little discussion of the practical problems involved in actually using some of suggested approaches. This is a particular feature with respect to the private sector. For example, both manuals recommend the use of general national household expenditure surveys to estimate private expenditures on health, without mentioning the serious problems involved in interpretation of such data. (This topic will be the subject of a subsequent DDM working paper.) Similarly, both recommend without qualification the use of data from tax returns, when available, to estimate the revenues of private providers, despite the unreliability of such information in countries with high levels of tax evasion. In all these cases the manuals need to be supplemented by other more detailed materials that can provide the relevant technical details and discussion of potential problems. Few such materials are currently available in developing countries.

Estimation of government health expenditures is generally covered well and in reasonable detail. However, certain areas warrant improvement or elaboration.

**Table 4****Excerpt of a Table Showing Disaggregation of Health Expenditures Data**

<i>Summary Table 2 (Completed) Health Sector Capital Expenditures</i>	<i>Ministry of Health</i>	<i>Other Ministries</i>	<i>Local Gov.'t</i>	<i>Other State Bodies</i>	<i>Missions</i>	<i>Industry</i>	<i>Local Voluntary Bodies</i>
Teaching/National Referral Hospital	100,000						10,000
General Hospitals	130,000				50,000	20,000	
Long-Stay Hospital							
Mental Hospital	20,000						
Other Institution (specify)							
Health Centers w/ Medical Staff							
Health Centers w/ Paramedical/Nursing Staff			200,000				
Health Posts w/ Community Health Workers Only			50,000				
Private Practitioners							
Private Dental Services							
Other Private Services (specify)							
Communicable Disease Control							
Domestic Water Supplies		60,000					
Sanitation Programmes		40,000	40,000				
Nutrition Programmes							20,000
Health Education Programmes							15,000
Occupational Health Programmes							
Other Programs (specify)							
Central Laboratory Service						50,000	
Travelling and Transport							
Headquarters Administration							
Training - Doctors, Dentists							
Training - Other Health Staff							
Medical Research							
Other Services (specify)							
Transfers							
<b>Total</b>	<b>250,000</b>	<b>100,000</b>	<b>290,000</b>		<b>50,000</b>	<b>250,000</b>	<b>45,000</b>

Source: Griffiths and Mills, 1982

**Table 4 (continued)**

Excerpt of a Table Showing Disaggregation of Health Expenditures Data

<i>Summary Table 2 (Completed) Health Sector Capital Expenditures</i>	<i>Local Voluntary Bodies</i>	<i>Direct Private Payments by Individuals</i>	<i>Insurance</i>	<i>Self-Help Private Sources</i>	<i>Foreign Aid - Official</i>	<i>Foreign Aid - Private</i>	<i>Total</i>
Teaching/National Referral Hospital	10,000						
General Hospitals							
Long-Stay Hospital							
Mental Hospital							
Other Institution (specify)							
Health Centers w/ Medical Staff							
Health Centers w/ Paramedical/Nursing Staff							
Health Posts w/ Community Health Workers Only							
Private Practitioners							
Private Dental Services							
Other Private Services (specify)							
Communicable Disease Control							
Domestic Water Supplies							
Sanitation Programmes							
Nutrition Programmes	20,000						
Health Education Programmes	15,000						
Occupational Health Programmes							
Other Programs (specify)							
Central Laboratory Service							
Travelling and Transport							
Headquarters Administration							
Training - Doctors, Dentists							
Training - Other Health Staff							
Medical Research							
Other Services (specify)							
Transfers							
Total	45,000						

Source: Griffiths and Mills, 1982

One problem, encountered more frequently today (1993) than in the early 1980s, concerns decentralized health services. In many countries there has been a shift in this direction, partly because the prevailing orthodoxy has regarded this arrangement as being more desirable. In some countries it is easy to collect data on all local spending. In others, especially large countries, it is much more difficult, and it may be easier to use sampling procedures. Unfortunately, neither manual gives detailed advice as to how such sampling should be carried out.

Nevertheless, both manuals remain useful for countries or organizations wishing to initiate a national health expenditure survey. To some extent they complement each other. The manual by Griffiths and Mills (1982) was written with the objective of training; thus it would be useful for training personnel who would be involved in a survey. On the other hand, the WHO manual (Mach and Abel-Smith, 1983) has a more theoretical and analytical approach, which would be helpful to those responsible for organizing a survey and then interpreting the results. These manuals will not be so appropriate, however, for countries wanting to set up a system for conducting repeated national health expenditure surveys and compiling regular national health accounts. Both manuals are concerned with conducting one-time surveys. However, much of the benefits of national health accounts comes from having a series of accounts over time. Obtaining such series requires the establishment of a permanent survey capacity and different approaches to data collection. One of the reasons why the 1978 WHO recommendation for repeated surveys has not been heeded is that little thought has been given to the means for setting up a permanent system for data collection and analysis.

## Limitations in Statistical Capabilities

The consensus of the 1977 WHO Study Group (WHO, 1978) was that countries should endeavor to carry out regular surveys of health expenditures. However, as already noted, although the various manuals mention the administrative and managerial problems of carrying out single surveys, none deal with the issue of how regular surveys ought to be facilitated and how they can be integrated into a continuous process of health policy formulation.

Clearly, lack of appropriate methodologies and tools is not the only problem faced by developing countries in establishing national health accounts. Many, if not most, lack the necessary statistical capabilities. When international donors have been interested in the problems of estimating national health expenditures, their purpose has generally been to pronounce on what is to be expected from individual countries and how the work should be done. On the other hand, implementation requires skilled statistical personnel, well-selected sampling frames, and organizations with the capacity to conduct surveys, as well as to

collect, analyze, and interpret data. When countries cannot even estimate their national income or enumerate their populations,<sup>4</sup> it is even more unlikely that they will be able to establish national health accounts unless considerable attention is paid to the process of institutional development and implementation.<sup>5</sup>

The problems of inadequate statistical infrastructure are especially acute in sub-Saharan Africa (Chander, 1990). For these countries, a major and sustained effort will have to be made to gradually enhance their capabilities. Infrastructure problems also exist in Eastern Europe and the former Soviet Union, but these are countries with considerable high-level human resources. Their problem lies in learning how to construct new forms of data collection that are compatible with those of the more market-oriented economies and more pluralistic health care systems. In much of Asia and Latin America, statistical capabilities are generally more developed; the problem there often involves effective utilization and adaptation of existing databases and capabilities. Resource Constraints

## Resource Constraints

The problem of resource constraints is partly related to that of infrastructural constraints. Countries with limited human and financial resources tend to have limited statistical capacities. (The connection between these two characteristics works both ways; countries that have had above-average success in maximizing their potential for development have often benefitted from more intensive use of information in policy-making.) Nevertheless, most countries have tended not to fully exploit whatever potential they do have for data collection. The reason is a failure by governments, the primary users of such data, to commit the necessary financial resources over long periods of time to these kinds of activities. Although the outlay required for making regular and reliable national health expenditure estimates may not be negligible, it is relatively small in comparison with what governments are already spending on health services. In general, the benefits that can be gained from better resource allocation and mobilization and more informed policy making will outweigh the costs.

Despite this potential gain, resources are rarely committed. In some countries, such as those of sub-Saharan Africa, severe resource constraints may be a factor. But in most others, failure to appreciate the benefits of such data collection is the major reason for failure to set up systems to estimate national health expenditures. This fact suggests that the real need is to design information systems that are perceived as being useful by policy makers information systems that produce relevant, reliable, and timely data. A challenge of this sort can be met only by greater flexibility in adapting guidelines and frameworks to local needs, by use of techniques appropriate to the level of existing national resources, by greater concern for the policy relevance and timeliness of data, and a by continuous dialogue between those creating the data and those using it.

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4/ Thus, while it can be plausibly argued that national income accounts of member countries of the Organisation for Economic Co-operation and Development will produce reasonably accurate estimates (Deering, 1981), this will not apply to developing countries. WHO used to occasionally publish information on private health spending in various countries derived from the SNA, but later abandoned this practice after recognizing the problems associated with this kind of data (Parker, 1984).

## Conclusion and Recommendations

Despite the repeated recommendations of many, including Abel-Smith (1963, 1967), WHO (1978), and a range of international donors since the 1960s, the availability of reliable and high-quality data on national health expenditures in developing countries has improved slowly. Since the 1970s, developing countries have been officially attempting to expand the availability of basic health services to their populations. This effort has occurred at a time when many developing countries have faced increasing constraints on internal resources and when international donors have begun to take a more proactive approach toward strategies for health financing. Estimating the overall level and composition of expenditure flows should be a fundamental part of formulating policies toward the health care sector. The lack of data at the international level also seriously constrains attempts to understand the factors behind both the development of health services and expenditures in developing countries.

Although realization by policy-makers of the need for such data is a first and important step in developing national health accounts, there remain many constraints to their development. A renewed effort is needed to improve the conceptual frameworks and methodological tools required to construct sets of national health accounts. Unlike the situation in developed countries, the technical capabilities required to develop these accounts are limited in developing countries. This lack places a far greater responsibility on international donors and organizations to assist in the process.

The existing database needs to be expanded so as to allow more meaningful comparisons across countries and time. Ideally, a uniform set of national health accounts adhering to a common international system should be constructed for each country. In reality, this has not yet been achieved even in countries, and for the moment is an unrealistic goal in the developing world. Instead there should be an incremental approach to the development of national health accounts, as there was with the development of national income accounts.

The focus of both international and national efforts should be to develop adequate accounting frameworks at a national level and to begin the collection of reliable and comprehensive data. Although deriving national health accounts from the work done for the SNA has seemed desirable, this process will not be feasible, and instead efforts should be directed toward constructing separate

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5/ To some extent, where statistical capabilities are extremely weak, alternative data collection methodologies will also be required. Methods may have to be employed that sacrifice some measure of accuracy in the interests of low cost and speed. These would be akin to the rapid assessment procedures developed elsewhere in the health sector.

accounts that are compatible with the SNA but compiled separately. Only when this goal has been achieved should attempts be made to harmonize accounts on a global basis.

Since there are often significant commonalities in the nature and structure of health care systems within geographical regions, adopting regional strategies for standardization may be an appropriate intermediate step in this process. There are already several regionally-based efforts to improve general statistical capabilities; these projects link international agencies, bilateral donors, and individual countries. In Africa, these include the United Nations' African Household Capability Program and the World Bank-led Social Dimensions of Adjustment (SDA) project. In Eastern Europe, they include efforts by the European Economic Community and the OECD's Centre for Cooperation with European Economies in Transition (CCEET). It may make sense to cooperate with these agencies in building capabilities to construct national health accounts.

The role of international agencies such as the World Bank, WHO, the U.N. Statistical Office, and others remains critical at an international level. They are the best placed to encourage the development of internationally acceptable guidelines for national health accounts. Not only do they have the technical expertise, but they are also often already involved in the process of health sector reform in many countries. The Informal Group of International Agencies in Health Economics in Developing Countries and the Council on Health Research for Development, which have recently been established (Maurice, 1993), may be useful forums to support such work. Together with academic institutions, they should support and carry out the necessary research and should develop methodological tools. The weak state of statistical capabilities in many countries, however, will probably require that technical assistance, and sometimes external resources, be made available to many developing countries on both short-term and long-term bases.

## Specific Recommendations

The themes explored and developed in this report lead to four recommendations:

- The process of developing national health accounts should be driven by the information needs of policy makers and other data users, particularly those within each country. This approach is much more likely to result in useful data and to ensure that resources continue to be committed for work on national health accounts.
- International guidelines should be drafted and should clearly state the basic concepts and definitions to be used in health accounts work. These would be supplemented by guidance as to the categories and formats for organization, tabulation, and presentation of data. The guide-

lines should not be inflexible; rather they should allow for adaptation according to a particular country's circumstances and policy-planning needs.

- Work needs to be done on developing, field-testing, evaluating, and publicizing more cost-effective methodological tools for estimating health expenditures. Areas for particular attention include private providers, out-of-pocket expenditures, foreign aid flows to the health sector, and public expenditures in decentralized forms of government.
- Attention should be given to helping countries develop their own statistical capabilities where these are seriously deficient. Long-term technical and financial assistance should be considered where necessary. This aid should be given on a regional basis if possible, in order to maximize use of the resources and support available within regions and to share relevant experiences.

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